THE

ONTARIO WATER RESOURCES

COMMISSION

WATER POLLUTION SURVEY

of the

VILLAGE OF DUNDALK

COUNTY OF GREY

1966

Report

on a

Water Pollution Survey

of the

VILLAGE OF DUNDALK

COUNTY OF GREY

November 1966

Division of Sanitary Engineering

INDEX

ONTARIO WATER RESOURCES COMMISSION

R E P O R T

INTRODUCTION

This is a report on a water pollution survey conducted in the Village of Dundalk on September 19, 1966. Surveys of this nature are made by the Ontario Water Resources Commission for the purposes of locating and recording sources of existing and potential water pollution. Where these sources are noted, recommendations concerning their abatement are made to the parties concerned. Where pollution problems are of a municipal nature, the OWRC advises municipalities concerning their needs for sewage treatment and disposal, and is equipped to construct, finance, and operate water and sewage works for Ontario municipalities on request.

On September 19, 1966, surface-water samples were collected from the drainage courses within the municipality and any known discharges thereto. The appendicies to this report include a tabulation of the results of samples collected, an interpretation of these results, and the map of the village showing the sampling point locations.

GENERAL

Location

The Village of Dundalk is situated adjacent to Highway No. 10 in the south-east quarter of the County of Grey. The 1965 assessed population is 895.

Drainage

Portions of the principal streets are provided with storm sewers. These discharge via two main outlets into watercourses tributary to the Grand River.

PREVIOUS SURVEY

A survey similar to this was performed in October of 1961. At that time it was noted that a serious sewage disposal problem existed in the village, and the installation of a municipal sewerage system and treatment facilities was recommended. It was noted that in the event of construction of a municipal sewerage system not being possible, severing of all private drains connected to the storm sewer system appeared to be the only other solution. Since that time the necessary measures to correct the sewage disposal problems have not been carried out.

A preliminary Certificate of Approval for the construction of a sewage works system in Dundalk had been issued by the Commission in March of 1960, however, due to financial problems, this programme has not been initiated to date.

WATER SUPPLY

Water for the village is obtained from two wells which are locally known as Well No. 1 and 2. Well No. 1 is the main source of supply while Well No. 2 is used for standby purposes.

Due to the obtaining of adverse bacteriological sample results during 1964-65, chlorination facilities to serve Well No. 1

were installed in May of 1965. Since that time, generally satisfactory sample results have been obtained.

SEWAGE DISPOSAL

Domestic sewage is generally disposed by means of private septic tank systems. The effluent from a number of septic tanks, the overflow from several tile beds, and the liquid processing wastes from a creamery are discharged to the storm sewer system. This condition which has existed for many years has created undesirable conditions in the form of pollution of nearby watercourses.

INDUSTRIAL WASTES

Liquid processing wastes from the United Dairy and Poultry Cooperative are discharged to the storm sewer system.

The Dairy formerly known as Dales Dairy and which is now known as Elliots Dairy has ceased processing operations and is used only as a distribution centre.

The slaughterhouse which was formerly called Heidmann Quality Meats is now known as Jakobs and Sons Limited. The premises is located on Highway No. 10 near the municipal boundary. Regular inspections of the waste disposal facilities are made by the Industrial Wastes Division of the Commission. These facilities consist of a septic tank, grease trap, and a two-celled lagoon. The effluent overflow from the No. 2 lagoon discharges to a receiving ditch which ultimately drains to the Grand River. This outfall is designated on the appended map as

GD-183.96-I. There was no flow in the ditch at the time of this investigation; however, it was evident that the lagoon had overflowed recently.

GARBAGE DISPOSAL

The garbage disposal site is located on Ida Street, (Concession III, in the Township of Proton) near the village limits. Garbage is burned but not covered. There does not appear to be any problems associated with water pollution being created by this operation.

DISCUSSION OF SAMPLE RESULTS

It is evident that conditions remain the same as noted during the survey conducted in 1961. The analyses reveal that waste material with high organic and bacterial concentrations were discharging from two storm outlets into the watercourses. A high coliform concentration was also noted in the sample collected at the side road downstream from Dundalk.

SUMMARY

A water pollution survey of the Village of Dundalk which was made on September 19, 1966, revealed that there has been no appreciable change in the unsatisfactory sewage disposal methods existing in the village. Pollution of local watercourses is occurring as a result of these disposal methods. The solution to this problem would be the installation of a municipal sewage works system.

RECOMMENDATIONS

The provision of a municipal sewage works should be further investigated. If finances are still found to be a problem a provincially financed project should be investigated.

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EXPLANATION AND SIGNIFICANCE OF LABORATORY ANALYSES

A Bacteriological Examination

Bacteriological examinations were performed on samples from the watercourse. The Membrane Filter technique was used to obtain a direct enumeration of coliform organisms. These organisms are normal inhabitants of the intestines of man and other warm blooded animals. They are always present in sewage and are generally minimal in other pollutants. The results of the examinations are reported as M.F. Coliform count per 100 ml.

The Commission's objective for surface waters in Ontario is a coliform count of not greater than 2,400 organisms per 100 ml.

B Chemical Analysis

The chemical analysis performed on stream and outfall samples included determinations for biochemical oxygen demand and suspended solids.

(1) Biochemical Oxygen Demand (BOD)

Biochemical Oxygen Demand is reported in parts per million (ppm) and is an indication of the amount of oxygen required for stabilization of decomposable organic matter present in sewage, polluted waters or industrial wastes. The completion of the test requires five days, under the controlled incubation temperature of 20°C.

The Commission's water quality objectives are (i) for stream water - a 5-Day BOD of not greater than 4 ppm. (ii) for storm sewer, water pollution control plant and industrial waste discharges - a

5-Day BOD of not greater than 15 ppm.

(2) Solids

The laboratory does tests to determine the total and suspended solids in a sample. The value for dissolved solids is determined by taking the mathematical difference between the total and suspended solids.

The concentration of suspended solids expressed in parts per million (ppm) is generally the most significant of the solids analyses in regard to stream water and outfall discharge qualities.

The OWRC's objective for discharge is a suspended solids concentration of not greater than 15 ppm.

VILLAGE OF DUNDALK

Sample Results

Table I

Sampling Point No.	Description	Date	5-Day BOD (ppm)	Solids Total (ppm)	Solids Susp. (ppm)	Solids Diss. (ppm)	Turbidity Units	M.F. Coliform Count/100 ML
G-182.0	Grand River at Ida St. (side road running south-east from Dundalk).	Oct.31/61	3.2	442	-	-	1.8	204
		Sept.19/66	3.0	386	5	381		50,000
GDU-183.15 W	Storm sewer outlet east of Victoria St. south of CPR tracks.	Oct.31/61	335	934	108	826		710,000
		Sept.19/66	62	480	44	436		88,000,000
GDU-183.23 W	Storm sewer outlet east of Victoria St. north of Osprey St.	Oct.31/61	255	958	340	618		2,090,000
		Sept.19/66	300	1,354	416	438		118,000,000
GDU-184.3	Westerly tributary at Highway No. 10.	Sept.19/66	No Flow.					
G-183.96 I	Industrial waste outfall from Jakobs and Sons Slaughterhouse to easterly tributary.	Sept.19/66	No Flow.					
G-184.0	Easterly tributary at Highway No. 10.	Oct.31/61	2.6	354	-	-	2.0	4,700
		Sept.19/66	No Flow.					

VILLAGE BOUNDARY

GLENELG ST.

GREY ST.

DOYLE ST.

ST.

ARTEMESIA ST.

OSPREY ST.

TORONTO ST.

C.P.R.

PROTON ST.

OWEN ST.

SOUND ST.

HOLLAND ST.

MELLANCTHON ST.

DUNDALK ST.

ARENA

MILL ST.

MAIN ST.

DUNDALK DISTRICT HIGH SCHOOL

McAULAY ST.

KEPPER ST.

VICTORIA ST.

ALLICE ST.

IDA ST.

HWY No. 10

JAKOBS & SONS LTD.

WELL No. 1

UDPC DUNDALK CREAMERY BRANCH

TOWN HALL

WELL No. 2

GDU-184·3

G-184·0

GDU-183·15 W

GDU-183·23 W

30" ø

18" ø

TO GRAND RIVER TRIBUTARIES

STORAGE POND

GOLD ST.

HAGAN ST.

YOUNG ST.

GRAND RIVER (TRIBUTARY)

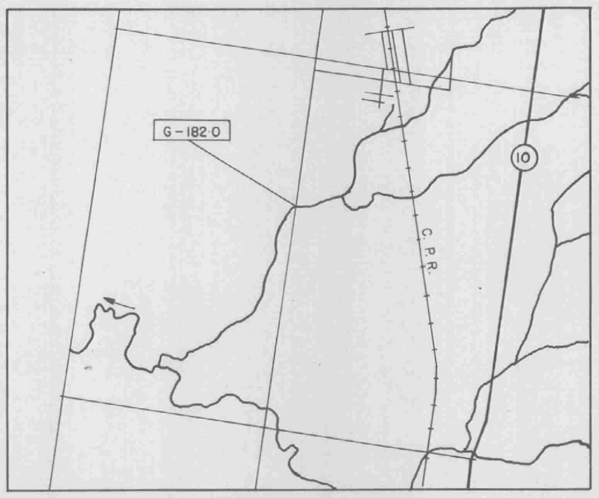
GDU-183·0

GRAND RIVER (TRIBUTARY) G-183·96 I

JAKOBS WATER STABILIZATION PONDS

LOCAL WATERCOURSE "A" TO GRAND RIVER TRIBUTARY

NOTE
FOR SAMPLING POINT (G-182·0) SEE INSET BELOW



SCALE : 11/4" = 1 MILE

LEGEND

——— – STORM SEWER

– – – – – – DRAINAGE DITCH

GDU-183·0 – STREAM SAMPLING POINT SHOWING MILEAGE

G-183·96 / I – OUTFALL SHOWING STREAM AND MILEAGE / TYPE OF OUTFALL

I – INDUSTRIAL WASTE EFFLUENT

W – STORM SEWER

NOTE
PLAN SHOWING APPROXIMATE LOCATION OF SEWER OUTLETS, SAMPLING POINTS AND GENERAL ROUTE OF LOCAL WATER COURSES

ONTARIO WATER RESOURCES COMMISSION

VILLAGE OF DUNDALK WATER POLLUTION SURVEY 1966

SCALE : 400 200 0 400 FEET	
DRAWN BY : L.L.BROOME	DATE : NOV., 1966
CHECKED BY : M.H.	DRAWING No: 66-84